

Claims

- [c1] A rotary finishing device, comprising:
 - a generally circular hub having an inner periphery and an outer periphery, said inner periphery defining a through-hole;
 - a plurality of slots formed about said outer periphery of said generally circular hub, each of said plurality of slots being defined by a pair of side portions extending from said outer periphery, said plurality of slots being generally uniformly spaced around said generally circular hub; and
 - at least one of said plurality of slots having at least one finishing sheet secured therein by an adhesive.
- [c2] The rotary finishing device of claim 1, wherein said generally cylindrical hub is formed of a metal material.
- [c3] The rotary finishing device of claim 2, wherein said generally cylindrical hub is constructed of aluminum.
- [c4] The rotary finishing device of claim 1, wherein said generally cylindrical hub is formed by an extrusion process.
- [c5] The rotary finishing device of claim 1, wherein said pair of side portions extends generally outward from said

outer periphery.

- [c6] The rotary finishing device of claim 1, wherein said pair of side portions extends generally inward from said outer periphery.
- [c7] The rotary finishing device of claim 1, wherein said generally circular hub includes a centerline defining a reference axis that extends from said centerline to a point between said side portions and wherein said pair of side portions extend from said outer periphery in a direction generally parallel to said reference axis.
- [c8] The rotary finishing device of claim 1, wherein said generally circular hub includes a centerline defining a reference axis that extends from said centerline to a point between said side portions and wherein said pair of side portions extend from said outer periphery in a direction parallel to said reference axis.
- [c9] The rotary finishing device of claim 1 wherein said pair of side portions extends from said outer periphery such that each of said plurality of slots is generally rounded.
- [c10] The rotary finishing device of claim 1, wherein said adhesive secures said at least one finishing sheet within said slot by adhering it to each of said pair of side portions.

- [c11] The rotary finishing device of claim 1, further comprising:
an end cap in communication with said generally cylindrical hub such that a portion of said end cap is in communication with said generally cylindrical hub to effectuate driving thereof.
- [c12] The rotary finishing device of claim 1, wherein said outer periphery includes at least one serration formed in each of said slots to assist in adhering said at least one abrasive sheet to said hub.
- [c13] The rotary finishing device of claim 1, wherein each of said plurality of slots includes at least one finishing sheet secured therein by an adhesive.
- [c14] The rotary finishing device of claim 13, wherein each of said plurality of slots includes at least one sheet of sandpaper secured therein by an adhesive.
- [c15] A rotary finishing device comprising:
at least one end cap in communication with a generally circular hub to allow driving thereof about an axis of rotation;
said generally circular hub including an outer periphery;
a plurality of slots uniformly spaced about said outer periphery of said generally circular hub; and

a finishing media secured by an adhesive within at least two of said plurality of slots.

[c16] The rotary finishing device of claim 15, wherein each of said at least two slots is defined by a pair of side portions.

[c17] The rotary finishing device of claim 16, wherein said pair of side portions of each of said at least two slots are oriented generally parallel to each other.

[c18] The rotary finishing device of claim 16, wherein each of said pair of side portions extend from said outer periphery in a generally parallel direction to a reference line extending from said axis of rotation to a point between said side portions.

[c19] The rotary finishing device of claim 16, wherein said pair of side portions extend from said outer periphery in a non-parallel direction to a reference line extending from said axis of rotation to a point between said side portions.

[c20] The rotary abrasive device of claim 15, wherein at least one of said plurality of slots includes at least one serration formed therein to provide increased adhering power to said adhesive.

- [c21] The rotary abrasive device of claim 20, wherein said adhesive is an epoxy.
- [c22] The rotary abrasive device of claim 15, wherein said generally cylindrical hub is formed of a metal material.
- [c23] The rotary abrasive device of claim 22, wherein said generally cylindrical hub is constructed of aluminum.
- [c24] The rotary abrasive device of claim 15, wherein said generally cylindrical hub is formed by an extrusion process.
- [c25] A rotary finishing device, comprising:
a generally circular hub having a centerline, an outer periphery, and an inner periphery defining a throughhole;
a plurality of slots spaced about said outer periphery of said generally circular hub, said plurality of slots positioned at approximately an equal number of degrees apart from one another;
at least one of said plurality of slots being defined by a pair of side portions that extend from said outer periphery of said generally circular hub in a direction not parallel to a reference line extending from said centerline to a point between said pair of side portions; and
a finishing media secured by an epoxy within said at least one slot.

- [c26] The rotary finishing device of claim 25, said generally cylindrical hub is formed of a metal material.
- [c27] The rotary finishing device of claim 26, wherein said generally cylindrical hub is constructed of aluminum.
- [c28] The rotary finishing device of claim 25, wherein said generally cylindrical hub is formed by an extrusion process.
- [c29] The rotary finishing device of claim 25, wherein said epoxy secures said finishing media within each of said slots by adhering them to said outer periphery and at least a portion of each of said pair of side portions.
- [c30] The rotary finishing device of claim 25, wherein said finishing media consists of at least one sheet of sandpaper.
- [c31] The rotary finishing device of claim 25, further comprising:
an end cap in communication with said generally cylindrical hub such that a portion of said end cap contacts said generally cylindrical hub.
- [c32] The rotary finishing device of claim 25, wherein said outer periphery includes at least one serration formed in said at least one slot to assist in adhering said finishing media to said generally circular hub.

- [c33] The rotary finishing device of claim 25, wherein said pair of sides in each of said plurality of slots has a first end where each of said pair of sides intersects said outer periphery and a second end opposite said first end and wherein a distance between said first ends is greater than a distance between said second ends.
- [c34] The rotary finishing device of claim 25, wherein each of said slots has a generally rounded configuration.
- [c35] The rotary finishing device of claim 25, wherein each of said pair of end portions extends generally outward from said outer periphery of said generally circular hub.
- [c36] The rotary finishing device of claim 25, wherein each of said pair of end portions extends generally inward from said outer periphery of said generally circular hub.
- [c37] A rotary finishing device, comprising:
a generally circular hub having an inner periphery and an outer periphery, said inner periphery defining a through-hole;
an end cap that is intended to engage said generally circular hub;
a plurality of slots spaced about said outer periphery of said generally circular hub, said plurality of slots defined by a pair of side portions and wherein said plurality of

slots are spaced generally uniformly about said outer periphery of said generally circular hub; and
a finishing media secured by an epoxy within at least two of said plurality of slots.

[c38] The rotary finishing device of claim 37, wherein said generally cylindrical hub is formed of a metal material.

[c39] The rotary finishing device of claim 38, wherein said generally cylindrical hub is constructed of aluminum.

[c40] The rotary finishing device of claim 37, wherein said generally cylindrical hub is formed by an extrusion process.

[c41] The rotary finishing device of claim 37, wherein each of said slots is defined by a pair of side portions extending from said generally circular hub.

[c42] The rotary finishing device of claim 41, wherein said pair of side portions extends generally outward from said outer periphery.

[c43] The rotary finishing device of claim 41, wherein said pair of end portions extends generally inward from said outer periphery.

[c44] The rotary finishing device of claim 41, wherein said generally circular hub includes a centerline defining a

reference line that extends from said centerline to a point between said side portions wherein said pair of side portions extend from said outer periphery in a direction generally parallel to said reference line.

- [c45] The rotary finishing device of claim 41, wherein said generally circular hub includes a centerline defining a line that extends from said centerline to a point between said side portions and wherein said pair of side portions extend from said outer periphery in a direction not parallel to said reference line.
- [c46] The rotary finishing device of claim 41, wherein said pair of side portions extends from said outer periphery such that each of said plurality of slots is generally rounded.
- [c47] The rotary finishing device of claim 41, wherein said adhesive secures said at least one finishing sheet within said slot by adhering it to each of said pair of side portions.